

**Таблица производных**

$$C' = 0$$

$$x' = 1$$

$$(x^a)' = a \cdot x^{a-1}$$

$$\left(\frac{1}{x}\right)' = -\frac{1}{x^2}$$

$$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$$

$$(a^x)' = a^x \cdot \ln a$$

$$(e^x)' = e^x$$

$$(\log_a x)' = \frac{1}{x \cdot \ln a}$$

$$(\ln x)' = \frac{1}{x}$$

$$(\sin x)' = \cos x$$

$$(\cos x)' = -\sin x$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$(\operatorname{ctg} x)' = -\frac{1}{\sin^2 x}$$

$$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}}$$

$$(\arccos x)' = -\frac{1}{\sqrt{1-x^2}}$$

$$(\operatorname{arctg} x)' = \frac{1}{1+x^2}$$

$$(\operatorname{arcctg} x)' = -\frac{1}{1+x^2}$$

**Правила вычисления производных**

$$(f(x) \pm g(x))' = f'(x) \pm g'(x)$$

$$(f(x) \cdot g(x))' = f'(x) \cdot g(x) + f(x) \cdot g'(x)$$

$$\left(\frac{f(x)}{g(x)}\right)' = \frac{f'(x) \cdot g(x) - f(x) \cdot g'(x)}{g^2(x)}$$

$$(f(g(x)))' = f'(g(x)) \cdot g'(x)$$